



FACT SHEET

Norwegian Cruise Line accepted delivery of its most innovative ship to date, Norwegian Bliss, from Meyer Werft, Papenburg, Germany. Its Maiden voyage was on April 19, 2018 out of Bremerhaven, Germany.

The Norwegian Bliss was christened by Elvis Duran on June 02, 2018.

Here are some exciting Bliss facts:

- Norwegian Bliss is the largest vessel to homeport in Seattle.
- World's Premier Marine Life Artist Wyland was commissioned to custom design the hull artwork for *Norwegian Bliss*, the biggest project of his career to date.
- Approximately 1735 Crew representing over 70 Nationalities work on board
- Ship's Registry: Nassau, Bahamas
- Ship's Call Sign: C6DL4
- Gross Tonnage: 168,028 GRT
- Auxiliary Power: Azipod Diesel Electric
- Guest Decks: 20
- Length: 333.32m/1093.3ft
- Width (max): 41.40m / 135.8 ft
- Draft: 8.7m/28.5ft
- Maximum Speed: 23.2 knots

1 Nautical Mile = 1.15 statute/land miles = 1852 Meters = 1.852 Km

1 knot = 1 nautical mile/Hour = 1.15 Statute mile/hour = 1.852 Km/Hour

ENGINE ROOM FACTS & FIGURES:

ENGINE AND PROPULSION FACTS:

MAIN ENGINES: MAN DIESEL 3x12V48/60CR (3x14400 kW)+MAN 2x14V48/60CR (2x16800kW)
total 76800kW / 102989 hp

PROPULSION POWER: ABB AZIPOD 2x22.0 MW total 44MW / 59004hp, Max Speed 23.2 knots

PROPELLERS: 2 x FPP, Diameter 5.9m

STABILIZERS: 1 pair / SKF/S800 TYPE / APPROX. 20m2 Fin Surface Area

BOW THRUSTERS: 3 x 3.5 MW, total 10.5mw / 14276hp BRUNVOLL

FACTS & FIGURES ON THE BRIDGE:

NAVIGATIONAL INSTRUMENTS

SAM Electronics Platinum system includes:

- 12 Multi-function Displays with Radar, ECDIS with ENC & ARPA functions integrated with Trackpilot (advanced autopilot), Position and speed sensor.
- Navigational Control Console (cockpit NCC)
- Sperry Auto-Pilot
- SAM Electronics Planning Station (Route Planning)
- SAM Electronics VDR (Voyage Data Recorder, Marine Black Box)
- SAM Electronics Dynamic Positioning System (DP)
- 1 Sperry Marine Fiber Optic Gyrocompass, 1 Sperry Marine Gyro Sphere Compass
- 1 Sperry Marine Magnetic Compass
- 12 Sailor VHF (Very High Frequency) radios
- 2 SAAB DGPS (Differential Global Positioning Systems)
- 3 SAM Electronics Speed Logs: 1 Electro Magnetic, 1 Satellite and 1 Doppler log
- 2 SAM Electronics Depth Echo Sounder
- 2 AIS (Automatic Identification System for Ships)
- 1 Weather station Equipped with wind sensor, temperature sensor and humidity – and atmospheric pressure
- Marinestar FUGRO berthing system with 2 separate GNSS antennas – additional aid to berthing by displaying very accurate distances between the vessel and the quay-side

RADAR

Stands for Radio Detection and Ranging. We have 5 onboard, 3 on the mast, 1 on the bow, 1 on the stern, which give the navigator a picture of the coastline, islands, beacons, other ships, and similar objects on the surface.

GPS NAVIGATOR

- The GPS (Global Positioning System) consists of twenty-four satellites in orbit around the Earth. By receiving the signal from at least 4 of these satellites we are able to maintain continuous tracking of the ship's position, exact speed, and accurate time.

GYRO COMPASS

- An electronic instrument that indicates true direction based on true North.

THERE IS NO MAGNETIC COMPASS ON NORWEGIAN BLISS. 1stSHIP TO BE BUILTWITHOUT!

INMARSAT C TELEX WITH LRIT (LONG RANGE IDENTIFICATION TRACKING DEVICE)

- Inmarsat-C is used for transmitting and receiving telex messages via Inmarsat Satellite. Its main task is to transmit and receive Emergency distress messages from ships around the world. The system receives Navigational warnings, Search and Rescue Meteorological forecasts and normal messages thru is unique Inmarsat-C number. It also sends a tracking signal to maritime authorities to locate the vessel's position at all times.

NAVTEX

- Navtex receives navigational warnings and weather forecasts.

SAFETY CENTER

Part of the Bridge where Emergency situations are assessed and evaluated. It is supported with several kinds of safety equipment controls and devices.

The following are part of the Safety Center.

- Consilium Main Fire Alarm computer. Receives and alerts locations of fire, heat flames and smoke.
- IMS Watertight Door central control. Closes all watertight doors simultaneously remotely from the safety center within 1 min.
- Fire Door central control. Closes Fire doors simultaneously remotely from the safety center within 1 minute.
- Hi fog control. Activates High Pressure Sprinkler valves to extinguish fires.
- NAPA Loading Stability Computer. Calculates intact and Damage Stability with a simulation function.
- 4 Valmarine Automation Systems. View and Controls onboard automation.
- Sisco Tracking System. A computer based system designed for Decision Support with Simulation and Track personnel on board including passengers when mustering in Emergency situations.
- Ventilation Emergency Shutdown Control Panel. Control intake and exhaust of ventilations onboard.

FIRE DETECTION PANEL (CONSILIUM INTEGRATED WITH SMS SYSTEMS)

An alarm will sound on the Bridge if a detector has been activated. The panel will display the exact location of the alarm. Detectors can be activated by smoke, heat and if removed or tampered with. Therefore do not touch these!

ANCHORS/WINDLASS

- 2 anchors each weighing 17.250 kG
- 2 anchor chains each 385m / 1263 ft and 114mm in diameter with K3 Grade Steel.
- Forward - 2 windlass combined with single mooring winches (Hatlapa) + 4 double rope mooring winches (Hatlapa) & AFT - 5 double rope mooring winches (Hatlapa)

LIFEBOAT & SAFETY INFORMATION

- 16 Lifeboats in 2 different holding capacity. 16 Lifeboats holds 314 persons each (Total 5,024 persons)
- 2 rescue boats x 6 persons
- 2 MES Stations with 24 life rafts in total. 20 which hold 158 persons & 4 which hold 50 persons (Total 3,360 persons)
- 10'089 Life Jackets (including child/infant)
- Maximum combined Lifeboat, Rescueboat and Liferaft Capacity is 8396 persons
- 700+ Fire Hydrants
- 7 Fire Stations (Certified fire fighting team onboard)

To ensure the safety of all guests, a simulated emergency drill is held every week for crew members. At that time, lifeboats are lowered to ensure they are in proper working order. On

Embarkation a mandatory passenger drill is also held to familiarize the passengers with onboard procedures in the unlikely event of an emergency.

FUEL USE & CAPACITY

Fuel Capacity: 3651.7 m³ = 964,782 Capacity US gallon

Fuel type: Heavy Fuel Oil Bunker C IFO 380 cst

900m³ per week however this all depends on load / speed

Gas oil capacity 237,780 Galloon per week

AIR CONDITIONING

York AC-Chillers 4 x 7050kw = Total = 28200kw

York FC-Chillers 3 x 2500kw = Total = 7500kw

AC+FC Total= 35700kw

Max 3 AC chillers and 2 FC chillers running at the same time.

MAIN LAUNDRY FACILITIES

- 2 Tunnel Washer 15kg minimum 25kg maximum capacity
- 8 Tunnel Dryer 50 kg capacity
- 2 Extractor Machine 120kg minimum capacity
- 3 Extractor Machine 55 kg capacity
- 4 Extractor Machine 33 kg capacity
- 5 Tumble Dryer 35 kg capacity
- 1 Dry Cleaning Machine 35 kg
- 2 Flat work ironer
- 2 Towel folding machine
- 2 hot plate pressing machine
- 2 Dry cleaning steam press
- 2 Steam press for the pants
- 2 Body master for shirt
- 1 Pants topper
- 1 Form finisher
- 1 Wet form finisher
- 1 hot plate mushroom
- 2 Tagging machine
- 1 steam spotting machine

GARBAGE INCINERATOR & PROCESSING

- 2x Deerberg System garbage incinerators are designed for thermal capacity of 2400kW with burnable waste or 2600kW with sludge oil.
- 2x Deerberg Dry waste silo capacity 22m³

FRESH WATER MANUFACTURER

Potable water capacity 4374 m³ / 1155488 gallon

Fresh water generators, 156 m³ / 41210 gallon per hour

Water consumption 1665 m³ / 439846 gallon per day

We are able to produce potable water on board from the seawater through process of evaporation and reverse osmosis

STEAM PRODUCTION

2 x Alborg oil fired boilers and 4* Economizers (exhaust gas boilers)

SURVEILLANCE SYSTEM

The CCTV surveillance system consists of 1400 cameras and is being utilized in multiple ways. Generally it is used to provide safety and security throughout the Ship and to inform crew and passengers of any hazards that may arise. It is further to monitor machinery via designated CCTV center in the Engine Control, water ways and passage ways, docking operations, bunkering, pilot on and off and numerous others navigational needs. The system is intended also to monitor all

movements on and off the ship such as embark/debark process, loading of provisions, luggage loading

Regular Surveillance operations monitor Casino and various aspects of the entire Hotel operations such as public areas, lounges, bars and restaurants, galleys and stairwells.

PERSONNEL

The Norwegian Bliss is comprised of approximately 1706 team members. The ship's personnel is divided into 3 departments, which all are under the Captain's command.

DECK: Led by the Staff Captain, includes all Bridge Officers, Deck, Medical, Security, Safety, Finance, IT and Surveillance Departments.

ENGINE: Led by the Chief Engineer who maintains all mechanical and electrical aspects of the ship.

HOTEL: Led by the Hotel Director, includes all Stewards, Cruise Director and Staff, Galley and Bar/Staff.

The Crew dines in dining room located on Deck 5. There is also a Crew Internet café, Crew Bar, Crew Disco & Gym.

GALLEY INFORMATION

The Galley is the Culinary Heart of the Norwegian Bliss. The Executive Chef is in charge of the entire Food Operation in all the Outlets throughout the Ship.

The Food & Beverage (F&B) team is comprised of approximately 1735 crew!

Main Hot Galley - Located on Deck 6. Here we prepare all the menus for the Manhattan Taste & Savor Dining Rooms. All entrées are cooked and plated just before the Waiter/ Waitress is ready to serve you.

Crew Galley - located on Deck # 5. Here we cook all of the meals for approximately 1821 Crew Members.

Each other specialty restaurant has its very own galley.

The Pantry - In this station of the Galley we prepare all of the cold Appetizers, Salads, Sandwiches, Canapés, the Cold Food items for the Lunch and Dinner Buffets. All Ice, Vegetable and Fruit Carvings are prepared here as well.

Fish, Meat & Poultry Stations - All specific preparations for these items is done individually at these different stations.

Bakery - All bakery Products are made onboard. The Bakery is in Operation 24 hours a day.

Pastry - This is where all Desserts and Pastry items are made fresh on a daily basis. For your information, we use over 200 pounds of white chocolate and 300 pounds of dark are consumed per cruise.

Executive Chef and Inventory Accountant Weekly* "Shopping List":

2,000	lbs.	Cereal
3,600	lbs.	Butter
2,500	lbs.	Pasta
6,000	lbs.	Cheese
45,000	lbs.	Fresh Fruits
3,900	lbs.	Sugar
5,600	doz. (72,200)	Fresh Eggs
8,700	lbs.	Fish
1,000	lbs.	Veal
1,000	lbs.	Lobster
20,000	lbs.	Poultry
25,000	lbs.	Beef
1,300	gallons	Ice cream
12,000	lbs.	Seafood
6,500	Cups	Yogurt
3,000	lbs.	Coffee
45,000	lbs.	Vegetables
3,000	gallons	Milk
7,500	lbs.	Rice
16,000	lbs.	Potatoes
15,000	lbs.	Flour
190	Types of Wine	

ELECTRONIC NAVIGATIONAL CHARTS (ENC)

- IMO fully approved detailed electronic nautical charts (sea maps) that shows all land, water depth, buoys, nature of sea bed, piers, defined areas & currents. It is composed of vectored cells that layers every object in the chart itself. It is fitted in all Radars and ECDIS systems and provides the Navigator full control of vessels position and real time vessels tracking. System has full back up and ship is approved to sail without using nautical paper charts.

SEXTANT

Used for celestial navigation to determine our position by observing celestial bodies i.e. sun, stars, planets, and the moon.

ELECTRONIC LOG BOOK (E-LOG)

The e-log book is used to log information such as arrival times, departure times, speed, and change in course. They can be used to reconstruct and review of previous voyages.

STEERING CONSOLE

- There are three ways to steer the ship; steering knob (manual steering), Auto Pilot (Automatic System Pilot) and Non-follow up unit (Back Up) Apart from these steering controls at the center cockpit, there are also steering controls on each bridge wing.

SIGNAL HORN & ALARM BELL

- These are used to sound maneuvering and warning signals for navigation and to sound the General Emergency Alarm (7 short & 1 long blast) here on the ship.

MANEUVERING PANEL

- Located on the center of the bridge, this controls the operation of the main engines and bow thrusters. In addition to having these controls on the bridge, they are also located on the bridge wings on each side of the ship. This allows the Captain to look down the sides of the ship as we pull into or away from a pier.

BRIDGE & WEB CAMERA (WWW.NCL.COM)

- Shows a 24 hour front view of the ships bow.

COMMUNICATION

We are equipped with the most sophisticated telecommunications system available. This system consists of 2 Comsat satellite terminals with voice, fax, telex and data, 2 satellite facsimile receivers, 1 complete HF/MF radio station included in GMDSS station with Sailor telex and Sat C telex. There are also two satellite dishes for TV reception and one C-band communication satellite with 12 voice/fax lines, high-speed data & Internet.

GMDSS EQUIPMENTS

VHF RADIO WITH DSC (DIGITAL SELECTIVE CALL)

- Very High Frequency radio communication. Used primarily for ship-to-ship and ship-to-shore communication. The range of the VHF radio is less than 50 miles and DSC is primary used with 20-30 miles

MF/HF RADIO WITH DSC (DIGITAL SELECTIVE CALL) AND RADIO TELEX

- Medium Frequency and High Frequency similar to HAM radio, this system is used for long range communication. Used for ship-to-ship and ship-to-shore communication. The range of the MF/HF radio can reach several thousands of miles depending on the radio propagation.